

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/392,682A

DATE: 07/11/2001

TIME: 14:56:58

Input Set : N:\Cr3\RULE60\09392682A.txt

Output Set: N:\CRF3\07112001\I392682A.raw

#13  
7/11/01  
7/30/01

3 <110> APPLICANT: Gruenert, Deiter C.  
 4 Kunzelmann, Karl  
 6 <120> TITLE OF INVENTION: GENE THERAPY BY SMALL FRAGMENTS HOMOLOGOUS REPLACEMENT  
 8 <130> FILE REFERENCE: 480.18-1(HV)  
 10 <140> CURRENT APPLICATION NUMBER: 09/392,682A  
 11 <141> CURRENT FILING DATE: 1999-09-09  
 13 <150> PRIOR APPLICATION NUMBER: 08/487,799  
 14 <151> PRIOR FILING DATE: 1995-06-07  
 16 <150> PRIOR APPLICATION NUMBER: 07/933,471  
 17 <151> PRIOR FILING DATE: 1992-08-21  
 19 <150> PRIOR APPLICATION NUMBER: 08/409,544  
 20 <151> PRIOR FILING DATE: 1995-03-24  
 22 <160> NUMBER OF SEQ ID NOS: 87  
 24 <170> SOFTWARE: PatentIn Ver. 2.0  
 26 <210> SEQ ID NO: 1  
 27 <211> LENGTH: 2908  
 28 <212> TYPE: DNA  
 29 <213> ORGANISM: human  
 32 <400> SEQUENCE: 1

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35 ctctagcctg ggtgacagag tgagactctg tctctaaata aataaataaa taaataaata 180
36 aataaataaa atcagtgtct tttcttctc tgctacctcc tttccttcta ctgagtttta 240
37 gtcagtagta ttatctttt tcagatttat ctttgtattg ttaaatctgc ttatgcttct 300
38 attactttat ttattagctt taaatgatac cttttgactt tcagcttttc ttaataaagc 360
39 aatcagcaaa tttcctttac actccacact tatacccat ttcctttgtt tgtttatttg 420
40 gtttttactt ctaactttt ttattgtcag gacataaac atatttaaac tttgtttttc 480
41 aactcgaatt ctgccattag ttttaatttt tgttcacagt tatataaatc tttgtttact 540
42 gatagtcctt ttgtactatc atctcttaaa tgactttata ctccaagaaa ggctcatggg 600
43 aacaatatta cctgaatatg tctctattac ttaatctgta cctaataata tgaaggtaat 660
44 ctactttgta ggatttctgt gaagattaata taaattaata tagttaaaagc acatagaaca 720
45 gcactcgaca cagagtgagc acttggcaac tgtagctgt tactaacctt tcccattctt 780
46 cctccaaacc tattccaact atctgaatca tgtgccctt ctctgtgaac ctctatcata 840
47 atacttgtca cactgtattg taattgtctc ttttactttc ccttgtatct tttgtgcata 900
48 gcagagtacc tgaaacagga agtattttta atattttgaa tcaaatgagt taatagaatc 960
49 tttacaaata agaataata cttctgctta ggatgataat tggaggcaag tgaatcctga 1020
50 gcgtgatttg ataatgacct aataatgatg ggttttattt ccagacttca cttctaataga 1080
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52 tctgttctca gttttcctgg attatgcctg gcaccattaa agaaaatata atctttggtg 1200
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58 ttatgaaatg gtgagaattt tgttcactca ttagtgaagc aaacgtcctc aatggttatt 1560
59 tatatggcat gcatataagt gatattgtgt atctttttta aagataccac aaaatatgca 1620
60 tctttaaaaa tatactccaa aaattattaa gattatttta ataattttta taatactata 1680

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61 gcctaattgga atgagcattg atctgccagc agagaattag aggggtaaaa ttgtgaagat 1740
62 attgtatccc tggctttgaa caaataccat ataacttcta gtgactgcaa ttctttgatg 1800
63 cagaggcaaa atgaagatga tgtcattact catttcacaa caatattgga gaatgagcta 1860
64 attatctgaa aattacatga agtattccaa gagaaaccag tatatggatc ttgtgctgtt 1920
65 cactatgtaa attgtgtgat ggtgggttca gtagttattg ctgtaaatgt tagggcaggg 1980
66 caatatgtta ctatgaagtt tattgacagt atactccaaa tagtgtttgt gattcaaaag 2040
67 caatatcttt gatagtggc atttgcaatt cctttatata atcttttatg aaaaaattg 2100
68 cagagaaaagt aaaatgtagc ttaaaatata gtatccaaaa aaatggaaaa gggcaaaccg 2160
69 tggattagat agaaatggca attcttataa aaagggttgc atgcttacat gaatggcttt 2220
70 ccatgtatat actcagccat tcaacagttt tttttttaga gccccatcct tttttttat 2280
71 acactttgag agcataatga aaagaaaagc tacctgcaaa agttttggac ttacctcaaa 2340
72 gaggatatac tacattcctc aaaaggcctt cttccaggaa tagtatttca taacctggag 2400
73 gttggaaaaa tctggattag ttacaaaaaa atctgagtggt ttctagcgga cacagatatt 2460
74 tgtctaggag gggactaggt tgtagcagtg gtagtgcctt acaagataaa tcatgggctt 2520
75 tattttactta cgagtggaaa agttgcggaa ggtgccttac agactttttt ttgctgtaaa 2580
76 gtatgtgttt tcccatagga attaatattt aaatggtggt ttgatttcct caagtcaacc 2640
77 tttaaaagta tatttagcca aaatatagct taaatatatt actagtaata aatttagtac 2700
78 tgtgggtctc tcattctcga aatgagcatt tactaatttc tgaacactgt gctagggtcct 2760
79 gggataacca aattgaataa gacatagtct atttttctga aggggtttata gcagagtccc 2820
80 ctgtgttaat aatgaaggag tgtgtggtat gtgaatcata tatcaatagg gttgttaaaa 2880
81 ataatgaaaa aaggagaaga gggaattc 2908

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83 &lt;210&gt; SEQ ID NO: 2

84 &lt;211&gt; LENGTH: 20

85 &lt;212&gt; TYPE: DNA

86 &lt;213&gt; ORGANISM: Artificial Sequence

88 &lt;220&gt; FEATURE:

89 &lt;223&gt; OTHER INFORMATION: Description of Artificial Sequence: synthetic

90 oligonucleotide

92 &lt;400&gt; SEQUENCE: 2

93 gcagagtacc tgaaacagga

20

95 &lt;210&gt; SEQ ID NO: 3

96 &lt;211&gt; LENGTH: 22

97 &lt;212&gt; TYPE: DNA

98 &lt;213&gt; ORGANISM: Artificial Sequence

100 &lt;220&gt; FEATURE:

101 &lt;223&gt; OTHER INFORMATION: Description of Artificial Sequence: synthetic

102 oligonucleotide

104 &lt;400&gt; SEQUENCE: 3

105 ccttctctgt gaacctctat ca

22

107 &lt;210&gt; SEQ ID NO: 4

108 &lt;211&gt; LENGTH: 20

109 &lt;212&gt; TYPE: DNA

110 &lt;213&gt; ORGANISM: Artificial Sequence

112 &lt;220&gt; FEATURE:

113 &lt;223&gt; OTHER INFORMATION: Description of Artificial Sequence: synthetic

114 oligonucleotide

116 &lt;400&gt; SEQUENCE: 4

117 cattcacagt agcttaccca

20

119 &lt;210&gt; SEQ ID NO: 5

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120 <211> LENGTH: 22
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122 <213> ORGANISM: Artificial Sequence
124 <220> FEATURE:
125 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
126     oligonucleotide
128 <400> SEQUENCE: 5
129 ccacatatca ctatatgcat gc                                22
131 <210> SEQ ID NO: 6
132 <211> LENGTH: 22
133 <212> TYPE: DNA
134 <213> ORGANISM: Artificial Sequence
136 <220> FEATURE:
137 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
138     oligonucleotide
140 <400> SEQUENCE: 6
141 ccattaaaga aaatatcatt gg                                22
143 <210> SEQ ID NO: 7
144 <211> LENGTH: 22
145 <212> TYPE: DNA
146 <213> ORGANISM: Artificial Sequence
148 <220> FEATURE:
149 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
150     oligonucleotide
152 <400> SEQUENCE: 7
153 ccattaaaga aaatatcatt gg                                22
155 <210> SEQ ID NO: 8
156 <211> LENGTH: 20
157 <212> TYPE: DNA
158 <213> ORGANISM: Artificial Sequence
160 <220> FEATURE:
161 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
162     oligonucleotide
164 <400> SEQUENCE: 8
165 ataggaaaca ccaaagatga                                20
167 <210> SEQ ID NO: 9
168 <211> LENGTH: 20
169 <212> TYPE: DNA
170 <213> ORGANISM: Artificial Sequence
172 <220> FEATURE:
173 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
174     oligonucleotide
176 <400> SEQUENCE: 9
177 ataggaaaca ccaatgatat                                20
179 <210> SEQ ID NO: 10
180 <211> LENGTH: 22
181 <212> TYPE: DNA
182 <213> ORGANISM: Artificial Sequence
184 <220> FEATURE:

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Input Set : N:\CrF3\RULE60\09392682A.txt

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185 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
186     oligonucleotide
188 <400> SEQUENCE: 10
189 actttaaaagc tgtcaagccg tg                                22
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192 <211> LENGTH: 23
193 <212> TYPE: DNA
194 <213> ORGANISM: Artificial Sequence
196 <220> FEATURE:
197 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
198     oligonucleotide
200 <400> SEQUENCE: 11
201 ctgtatttttg tttattgctc caa                                23
203 <210> SEQ ID NO: 12
204 <211> LENGTH: 22
205 <212> TYPE: DNA
206 <213> ORGANISM: Artificial Sequence
208 <220> FEATURE:
209 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
210     oligonucleotide
212 <400> SEQUENCE: 12
213 gagggatttg gggaattatt tg                                22
215 <210> SEQ ID NO: 13
216 <211> LENGTH: 22
217 <212> TYPE: DNA
218 <213> ORGANISM: Artificial Sequence
220 <220> FEATURE:
221 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
222     oligonucleotide
224 <400> SEQUENCE: 13
225 cttgctaaaag aaattcttgc tc                                22
227 <210> SEQ ID NO: 14
228 <211> LENGTH: 19
229 <212> TYPE: DNA
230 <213> ORGANISM: Artificial Sequence
232 <220> FEATURE:
233 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
234     oligonucleotide
236 <400> SEQUENCE: 14
237 caccaaagat gatatttttc                                19
239 <210> SEQ ID NO: 15
240 <211> LENGTH: 20
241 <212> TYPE: DNA
242 <213> ORGANISM: Artificial Sequence
244 <220> FEATURE:
245 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic
246     oligonucleotide
248 <400> SEQUENCE: 15
249 aacaccaatg atattttctt                                20

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Input Set : N:\CrF3\RULE60\09392682A.txt

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251 <210> SEQ ID NO: 16  
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253 <212> TYPE: DNA  
254 <213> ORGANISM: Artificial Sequence  
256 <220> FEATURE:  
257 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic  
258     oligonucleotide  
260 <400> SEQUENCE: 16  
261 cttttcctgg attatgcctg gcac 24  
263 <210> SEQ ID NO: 17  
264 <211> LENGTH: 24  
265 <212> TYPE: DNA  
266 <213> ORGANISM: Artificial Sequence  
268 <220> FEATURE:  
269 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic  
270     oligonucleotide  
272 <400> SEQUENCE: 17  
273 actgtagctg tactaccttc catc 24  
275 <210> SEQ ID NO: 18  
276 <211> LENGTH: 25  
277 <212> TYPE: DNA  
278 <213> ORGANISM: Artificial Sequence  
280 <220> FEATURE:  
281 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic  
282     oligonucleotide  
284 <400> SEQUENCE: 18  
285 gacaattaca atacagtgtg acaag 25  
287 <210> SEQ ID NO: 19  
288 <211> LENGTH: 25  
289 <212> TYPE: DNA  
290 <213> ORGANISM: Artificial Sequence  
292 <220> FEATURE:  
293 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic  
294     oligonucleotide  
296 <400> SEQUENCE: 19  
297 ggggttcattt gatcacaata aatgc 25  
299 <210> SEQ ID NO: 20  
300 <211> LENGTH: 25  
301 <212> TYPE: DNA  
302 <213> ORGANISM: Artificial Sequence  
304 <220> FEATURE:  
305 <223> OTHER INFORMATION: Description of Artificial Sequence: synthetic  
306     oligonucleotide  
308 <400> SEQUENCE: 20  
309 cagcttttct taataaagca atcag 25  
311 <210> SEQ ID NO: 21  
312 <211> LENGTH: 24  
313 <212> TYPE: DNA  
314 <213> ORGANISM: Artificial Sequence

**VERIFICATION SUMMARY**

DATE: 07/11/2001

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Input Set : N:\Crf3\RULE60\09392682A.txt

Output Set: N:\CRF3\07112001\I392682A.raw